IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: MICHAEL PITTROFF ET AL.

Serial No.: 09/988,820 Group Art Unit: 1724

Filed: NOVEMBER 20, 2001 Examiner: Robert Spitzer

Title: ISOLATION OF SF6 FROM INSULATING GASES IN GAS-INSULATED LINES

Declaration Under 37 C.F.R. § 1.132

Assistant Commissioner for Patents
Washington, D. C. 20231

Sir:

I, Michael Pittroff, declare and state that:

1. My name is Michael Pittroff. I reside at Mirabellengarten 25, 30539 Hannover, Germany, and am a citizen of the Federal Republic of Germany.

2. I graduated in 1988 as chemical engineer from the Naturwissenschaftlich-Technischen Akademie of Prof. Dr. Grübler in Isny/Algäu.

3. I have worked for Solvay Deutschland GmbH since 1990, and have been working in the "Technical Service" area of Solvay Fluor and Derivative GmbH since 1996.

4. I am responsible for the development of the applications technology of SF_6.

5. I have at least ordinary skill in the art of SF_6 processing.

6. I am a co-inventor of the above-referenced U.S. patent application.

7. The experiments discussed in this declaration were carried out under my direction and supervision and correspond to the experiments provided in the specification of the above-referenced U.S. patent application.

8. The results of these experiments are shown below in Table 1.

Table 1: Experimental Results

SF_6 Einsatzkonzentration [Initial Concentration] Vol.-%	DurchfluBmenge [flow rate] l/min.	Produktkonzentration in Vol.-% ei [Final Concentration, Vol.-%] 5 bar	9 bar	13 bar
5	5	5	5.6	5.8
	10	5	5.5	5.7
	20	5	5.1	5.2
10	5	33.37	51.13	70.31
	10	18.19	27.87	35.05
	20	13.59	17.54	21.39
20	5	56.13	77.53	89.55
	10	35.38	50.6	66.05
	20	26.42	33.6	42.37
50	5	79.5	90.13	96.71
	10	77.32	88.31	95.21
	20	72.31	86.45	94.36

9. The data show that the claimed process has little effect on an initial SF_6 content <5% by volume even where the flow rate and the feed pressure are varied.

10. At an initial SF_6 content of more than 50% by volume, a gas separation according to the inventive method is superfluous, since such mixtures can readily be liquefied under pressure.

11. Therefore, having directed and supervised the experiments discussed above, having considered the results and my statements above regarding initial SF_6 content, and being one having ordinary skill in the art of processing SF_6, it is my opinion that 5% by volume initial SF_6 content and 50% by volume initial SF_6 content are critical values of the claimed invention.

12. Attached to this declaration as Exhibit A, is a copy of a publication entitled "Separation of SF_6/N_2 Mixtures." I delivered this lecture January 24/25, 2000. It indicates that membrane feed pressures were studied from "5 to 13 bar," and that "[a]t higher pressures the separation of SF_6 from N_2 using this hollow fibre membrane with a constant flow showed a better product enrichment for the stream rich in SF_6 and simultaneously the SF_6 concentration in the permeate stream increased as well."

13. Attached to this declaration as Exhibit B, is a copy of the Technical Specification for NITROPRIME® membrane unit, which may be employed according to the principles of the invention and which indicates that it can be employed up to a pressure of 16 bar.

14. Therefore, having directed and supervised the experiments discussed above, having reviewed the results and the above statements regarding membrane feed pressures, and being one having ordinary skill in the art of processing SF_6, it is my opinion that membrane feed pressures of 10 to 13 bar are critical values of the claimed invention.

15. All statements made herein of my own knowledge are true and all statements made on information and belief are believed to be true; and further these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

21.07.03
Date

Michael Pittroff
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